

CLAIMS

What is claimed is:

1 1. A medical system that can denature a cornea,
2 comprising:

3 an energy device that can direct energy to a focal
4 point within the cornea; and,

5 a movement device that moves the focal point of the
6 energy.

7 2. The medical device of claim 1, wherein said energy
8 device includes a laser.

1 3. The medical device of claim 2, wherein said
2 movement device includes a lens and a mechanism for moving
3 a focal point of said lens.

4 4. The medical device of claim 3, wherein said
5 mechanism includes a stepper motor.

6 5. The medical device of claim 3, wherein said
7 mechanism includes a solenoid.

8 6. The medical device of claim 3, wherein said
9 mechanism includes a shaped memory metal.

10 7. The medical device of claim 3, wherein said
11 movement device includes a feedback sensor.

12 8. The medical device of claim 7, wherein said
13 feedback sensor includes an optical encoder.

14 9. The medical device of claim 7, wherein said
15 feedback sensor includes a linear variable differential
16 transformer.

17 10. The medical device of claim 7, wherein said
18 feedback sensor includes a hall effect sensor.

19 11. The medical device of claim 7, wherein said
20 feedback sensor includes a proximity sensor.

1 12. The medical device of claim 1, wherein said energy
2 device is a non-coherent light source.

1 13. The medical device of claim 12, wherein said
2 movement device includes a lens and a mechanism for moving
3 a focal point of said lens.

4 14. The medical device of claim 13, wherein said
5 mechanism includes a stepper motor.

6 15. The medical device of claim 13, wherein said
7 mechanism includes a solenoid.

8 16. The medical device of claim 13, wherein said
9 mechanism includes a shaped memory metal.

10 17. The medical device of claim 13, wherein said
11 movement device includes a feedback sensor.

12 18. The medical device of claim 17, wherein said
13 feedback sensor includes an optical encoder.

14 19. The medical device of claim 17, wherein said
15 feedback sensor includes a linear variable differential
16 transformer.

17 20. The medical device of claim 17, wherein said
18 feedback sensor includes a hall effect sensor.

19 21. The medical device of claim 17, wherein said
20 feedback sensor includes a proximity sensor.

21 22. The medical device of claim 1, wherein said energy
22 device includes an ultrasonic transducer.

23 23. The medical device of claim 22, wherein said
24 movement device includes a mechanism for moving said
25 ultrasonic transducer.

26 24. The medical device of claim 23, wherein said
27 mechanism includes a stepper motor.

28 25. The medical device of claim 23, wherein said
29 mechanism includes a solenoid.

30 26. The medical device of claim 23, wherein said
31 mechanism includes a shaped memory metal.

32 27. The medical device of claim 23, wherein said
33 movement device includes a feedback sensor.

34 28. The medical device of claim 27, wherein said
35 feedback sensor includes an optical encoder.

36 29. The medical device of claim 27, wherein said
37 feedback sensor includes a linear variable differential
38 transformer.

39 30. The medical device of claim 27, wherein said
40 feedback sensor includes a hall effect sensor.

41 31. The medical device of claim 27, wherein said
42 feedback sensor includes a proximity sensor.

43 32. A medical device that can denature a cornea,
44 comprising:

45 a plurality of energy devices that can each direct
46 energy to a different focal point within the cornea; and,

47 a controller that can select the energy devices so that
48 the focal point of energy varies through the cornea.

1 33. The medical device of claim 32, wherein said
2 energy devices include light sources.

1 34. The medical device of claim 32, wherein said
2 energy devices include ultrasonic sources.

1 35. The medical device of claim 32, wherein said
2 selector includes a controller.

1 36. A method for denaturing a cornea, comprising:

2 directing energy onto a focal point within the cornea;
3 and,

4 varying the focal point of the energy.

1 37. The method of claim 36, wherein the energy creates
2 a column of denatured tissue within a stroma of the cornea.

1 38. The method of claim 36, wherein the energy is
2 light.

1 39. The method of claim 36, wherein the energy is
2 ultrasonic.